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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,272	10/27/2003	Hiromitsu Nakaoka	12844.49US01	4693

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EXAMINER
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NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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05/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/695,272

**Applicant(s)**

NAKAOKA ET AL.

**Examiner**

Jimmy H. Nguyen

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5,8,9,12,13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) 5,8,9,12,13,15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 04/20/2007.
2. Claims 5, 8, 9, 12, 13, 15 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species. Claims 17-19 are considered as follows:

#### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 19, the disclosure, when filed, does not fairly convey to one of ordinary skill in the art that applicants had in their possession the claimed limitation, "said signal side driving portion including a PWM controller arranged ... combination" in lines 9-18. The original disclosure does not contain such description and details regarding to the claimed PWM controller, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

#### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2629

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (US 5,307,804), hereinafter Yamaguchi.

As to claims 17-19, Yamaguchi discloses a simple matrix liquid crystal display (LCD) display device (see Fig. 1) and an associate method of providing signals to drive a plurality of pixels arranged in the simple matrix LCD device, which comprises a simple matrix (LCD panel 3; see Fig. 1) having a plurality of signal electrodes (data electrodes X1-Xn; Fig. 1; col. 3, line 10), a plurality of scanning electrodes (scan electrodes Y1-Ym; see Fig. 1; col. 3, lines 10-11) and a plurality of pixels (cells; Fig. 1; col. 3, lines 14-19) corresponding intersections between said signal electrodes (X) and said scanning electrodes (Y); a scanning side driving portion (scan driver 2; see Fig. 1) arranged to sequentially supply said scanning electrodes with a scanning voltage signal (see Fig. 3c; waveform 3C; col. 3, lines 14-19); and a signal side driving portion (data driver 1; see Fig. 1) to supply said signal electrodes (X) with rearward approach PWM signals and forward approach PWM signals synchronously with the scanning voltage signal (see Fig. 3A-3C), said signal side driving portion (1) including a PWM signal controller arranged: to apply the rearward approach PWM signals to said pixels corresponding to odd numbered scanning electrodes and the forward approach PWM signals to said pixels corresponding to the even-numbered scanning electrodes in a rearward/forward approach combination, and to apply the forward approach PWM signals to said pixels corresponding to the odd-numbered scanning electrodes and the rearward approach PWM signals to said pixels corresponding to the even-numbered scanning electrodes in a forward/rearward approach combination, wherein said rearward/forward approach combination and said forward/rearward approach combination are

Art Unit: 2629

switched every frame cycle by said PWM signal controller (see Figs. 3A-3C; col. 3, line 31 through col. 6, line 27). Accordingly, all the limitations in the claims are read in the reference.

7. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. (US 5,010,326), hereinafter Yamazaki.

As to claims 17-19, Yamazaki discloses a conventional simple matrix liquid crystal display (LCD) display device (see Fig. 1; col. 1, line 11-12) and an associate method of providing signals to drive a plurality of pixels arranged in the simple matrix LCD device, which comprises a simple matrix (a LCD panel 1; see Fig. 1) having a plurality of signal electrodes (segment electrodes X1-X6; Fig. 1; col. 3, lines 18-19), a plurality of scanning electrodes (common electrodes Y1-Y6; see Fig. 1; col. 3, lines 16-17) and a plurality of pixels (display dots 7/8; Fig. 1; col. 3, lines 20-22) corresponding intersections between said signal electrodes (X) and said scanning electrodes (Y); an inherent scanning side driving portion arranged to sequentially supply said scanning electrodes with a scanning voltage signal (see Fig. 2B; col. 1, lines 55-56); and an inherent signal side driving portion to supply said signal electrodes (X) with rearward approach PWM signals and forward approach PWM signals synchronously with the scanning voltage signal (see Fig. 2A; col. 52-53), said signal side driving portion including a PWM signal controller arranged: to apply the rearward approach PWM signals to said pixels corresponding to odd numbered scanning electrodes and the forward approach PWM signals to said pixels corresponding to the even-numbered scanning electrodes in a rearward/forward approach combination, and to apply the forward approach PWM signals to said pixels corresponding to the odd-numbered scanning electrodes and the rearward approach PWM signals

Art Unit: 2629

to said pixels corresponding to the even-numbered scanning electrodes in a forward/rearward approach combination, wherein said rearward/forward approach combination and said forward/rearward approach combination are switched every frame cycle by said PWM signal controller (see Figs. 2A-2B; col. 1, line 29 through col. 2, line 27). Accordingly, all the limitations in the claims are read in the reference.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasunishi et al. (US 6,597,335 B2), hereinafter Yasunishi, and further in view of Hanami et al. (US 6,160,594), hereinafter Hanami.

As to claims 17-19, Yasunishi discloses a simple matrix display (a LCD device 100, see Fig. 1, col. 3, line 59) and an associate method of providing signals to drive a plurality of pixels arranged in the simple matrix display, which comprises a simple matrix (a LCD panel 8; see Fig. 1) having a plurality of signal electrodes (column electrodes X1-Xm; Fig. 1), a plurality of scanning electrodes (row electrodes Y1-Yl; see Fig. 1) and a plurality of pixels (see Fig. 1) corresponding intersections between said signal electrodes (X) and said scanning electrodes (Y); a scanning side driving portion (row driver 6; see Fig. 1) arranged to sequentially supply said scanning electrodes with a scanning voltage signal (see Fig. 10d; waveform R1M); and a signal

Art Unit: 2629

side driving portion (a column driver 7; see Fig. 1) to supply said signal electrodes (X) with rearward approach PWM signals and forward approach PWM signals synchronously with the scanning voltage signal (see Fig. 10d; waveforms C1M and C2M), said signal side driving portion including a PWM signal controller arranged: to apply the rearward approach PWM signals to said pixels corresponding to odd-numbered scanning electrodes and the forward approach PWM signals to said pixels corresponding to the even-numbered scanning electrodes in a rearward/forward approach combination (see Fig. 10d). Further see Figs. 10c and 10e. In other words, Yasunishi teaches applying a rearward/forward combination approach in every frame cycle and fails to teach “switching between a rearward/forward combination approach and a forward/rearward combination approach in every frame”. Accordingly, Yasunishi discloses all limitations of these claims except for switching between a rearward/forward combination approach and a forward/rearward combination approach in every frame, as presently claimed

However, Hanami discloses a related matrix LCD device (see Fig. 2) comprising a scanning side driving portion (a scan electrode driver circuit 13; see Fig. 2, col. 1, line 22) and a signal side driving portion (a signal electrode driver circuit 14; see Fig. 2; col. 1, lines 22-23) to supply said signal electrodes (X) with rearward approach PWM signals and forward approach PWM signals synchronously with the scanning voltage signal (see Figs. 6B and 7B). Hanami further teaches that during the first frame, if the signal side driving portion (14) applies a rearward (or forward) PWM signal to said pixels corresponding to a scanning electrode, the signal side driving portion (14) should apply a forward (or rearward) PWM signal to the same pixels corresponding to the same scanning electrode during the second (next) frame (see Figs. 6B and 7B). In other words, Hanami teaches “switching between a rearward/forward combination

Art Unit: 2629

approach and a forward/rearward combination approach in every frame". It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the signal side driving portion of Yasunishi display device so as to be capable of switching between a rearward/forward combination approach and a forward/rearward combination approach in every frame, in view of the teaching in the Hanami reference, because this would reduce the power consumption, as taught by Hanami (see Hanami, col. 2, line 65 through col. 3, line 5; col. 5, line 5, lines 45-56).

### *Response to Arguments*

10. Applicant's arguments, see pages 8-9 of the amendment filed on 4/20/2007, with respect to claim objections, the rejections under 35 USC 112, first and second paragraphs, and the rejections under 35 USC 102(e) as being anticipated by Yasunishi et al. in the Office Action dated 10/03/2006, have been fully considered and are persuasive in light of the cancellation to claims 1-4.

### *Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



Art Unit: 2629

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675.

The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN  
May 4, 2007



Jimmy H. Nguyen  
Primary Examiner  
Technology Division: 2629